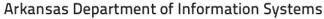


Data and Voice Data Collection Kickoff

Jeff Perkins - Senior Partner, Gartner Catherine Taylor - Benchmarking Lead, Gartner

6 July 2017











Meeting objectives.



- Kickoff the data collection effort for data and voice
- Review benchmarking models
- Data collection template walk-through
- Operator will take questions during the call, questions will be answered at the end of the call
- The meeting will be recorded for future playback
- Q&A

Data Collection Timing and process for questions.



Timing

- Agency data collection will begin the week of July 3.
- Agency data collection will take place over a period of 5 (five) weeks and will conclude by August 4th.

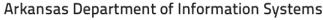
Questions

- Submit questions and any documents to DIS (Scott Utley and Steve Hulsey)
- DIS will forward questions and documents to Gartner

Data Collected

- Agencies will provide data for assets and workload owned and operated by the agency, not services performed by DIS
- If DIS and your agency share costs and workload, it will be necessary to work together to ensure that there is no overlap.







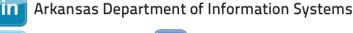




Data collection approach.

- Complete the following data collection template:
 - Gartner Benchmark Data Collection Questionnaire non-DIS Agencies.xlsx
 - This worksheet contains tabs for data and voice









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Data collection guidelines.

- Provide data for FY17, annualize as needed
- Best Data Within Allotted Timeframe
- Not an Accounting-level Exercise (No decimal points)
- Accuracy +/-10% or So Is Acceptable
- One Approach
 - First Pencil In Estimates
 - Then Refine Figures as Time Permits
- Document Assumptions and Retain Worksheets Internally
 - Likelihood of reuse is high during subsequent annual updates
- Start ASAP!
- Count all units in scope of benchmark
- Units must match cost and staff
- Fully depreciated units still in service are counted
- Hardware includes depreciation, lease and maintenance
- Software includes maintenance and expensed purchases
- Personnel costs include benefits and should match total FTE, no FTE should be counted more than once





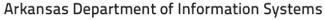


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Data collection concepts.

- Gartner uses Sourcing Types to classify costs. This is the classification of who is delivering the service for which you are providing cost or headcount:
- Insource: includes the spending (purchases, depreciation and personnel costs) and head count for in-house resources.
- Contractor: includes the spending and head count for contract labor that is supplemental to existing in-house staff and is "operationally" managed by in-house staff.
- Outsource: includes the fees for outsource contracts in which outsource is defined as any situation where the full operational responsibility for IT services is completely handed over to an external service provider. This also includes telecom carrier costs.
- Maintenance: includes the fees for maintenance contracts (i.e., time and materials) that are
 not embedded in the purchase price of the asset and, therefore, are separable from
 depreciation. Hardware and software maintenance is included here. Maintenance is
 differentiated from outsource in that the asset is still managed internally with the staff calling
 in maintenance support as appropriate.
- Reporting maintenance costs for hardware if maintenance costs for hardware can be separated out, they can be reported under hardware and categorized with a sourcing type of maintenance.











Questionnaire Walk-Through

DATA AND VOICE









Local Area Network (LAN) Data model



Local Area Network Data Model

	■ Switches
	■ Routers
	■ Firewalls
Hardware	■ Wireless Access Points
	■ DNS
	■ DHCP
	Network Management/NOC
O o Sharana	■ Security
Software	Network Management
	■ Hardware
Disaster	■ Software
Recovery	■ DR "Hot Site"
	DR Connectivity
Occupancy	Office Space
	■ Technical Support
1 Personnel	(operations and technical services)
Personner	Planning and Process Management
	Administration (includes management)

- Key Data Collection Concepts
 - Workload
 - Network ports
 - Sites supported
 - Costs
 - Annual hardware cost for network equipment (switches, etc.)
 - Annual software costs for network management (include in hardware if unable to separate)
 - Annual disaster recovery
 - Annual facilities and occupancy
 - People supporting the Local Area Network:
 - Network support, break/fix, planning, etc.
 - Management



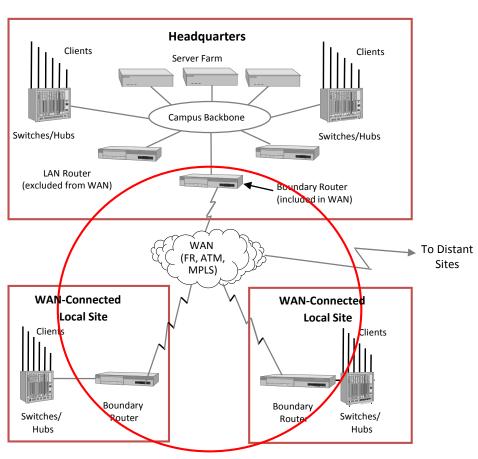






Local Area Network What should be included in LAN

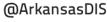




- WAN components are circled in red. The costs, and workload, associated with them fall under the WAN module. WAN is collected by DIS and out of scope for Agency collection
- LAN components are shown in the blue rectangles (excluding the WAN Boundary Routers). The costs, and workload, associated with them fall under the LAN module. Note that any Campus Backbone/
 Inter-Building connectivity is out of scope for any module
- Only report LAN if owned and operated by your agency. If DIS is providing LAN service, do not include.











Reporting LAN Workload.

Local-Area Data Network Workload	
	North America
Sites	
Total Sites	0
Ports	
Active Ports	0
Active VoIP Ports	0
Maximum Active Concurrent Users on a Wireless Hub	0

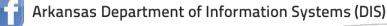
- Total Sites: Single enterprise facility located on a continuous piece of property that is not crossed by a public thoroughfare. This includes the number of sites (locations) including buildings, offices, campuses, as examples with dedicated connections to the network.
- Active Ports: Entrance or physical access point to the network typically through a switch device. This is the count of ports actually in use and would include ports with devices attached (e.g., PCs plugged into ports at the users cubicle or office) as well as data ports that are "live" waiting to accept a device (e.g., live ports in a conference room or in a visitor's cubicle).
- Active VoIP Ports: This includes the entrance or physical access point to the network typically through a switch device used specifically for VoIP. This is the count of ports actually in use and would include ports with VoIP devices attached (e.g., VoIP phones plugged into ports at the users cubicle or office) as well as VoIP ports that are "live" waiting to accept a device (e.g., live ports in a conference room or in a visitor's cubicle).
- Maximum Active Concurrent Users on a Wireless Hub: This includes the maximum number of observed number wireless users accessing the LAN at once.



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Source: Gartner, Inc.

LAN Cost Costs / spending data collection.



Local-Area Data Network					
	Total				
Sourcing Type		Insourced	Outsourced	Contractor	Maintenance
Spending					
Non-Personnel					
Hardware	\$0	\$0	\$0		\$0
Software	\$0	\$0	\$0		\$0
Disaster Recovery	\$0	\$0	\$0		\$0
Occupancy	\$0	\$0	\$0		\$0
Unallocated (Non-Personnel)	\$0	\$0	\$0		\$0
Total Non-Personnel	\$0	\$0	\$0		\$0

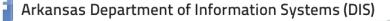
- Report annual hardware, software, disaster recovery costs here, grouped by sourcing types
- Costs much match the workload supported
- Hardware: Annual expense, lease, depreciation, maintenance, installation and taxes, as appropriate, for all hardware assets
- Software: Annual license and maintenance costs, as well as costs associated with new purchases and upgrades
- Disaster Recovery: Dedicated costs only, such as a contract or fully dedicated (no production)
- Unallocated: For input of costs where a breakdown is unknown such as outsourcing



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Source: Gartner, Inc.

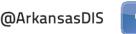
LAN Cost Definitions



- Hardware: Annual depreciation, expense, lease and maintenance for the following:
 - Switching and Routing LAN Routers, Hubs, and Switches: These are all the switching/routing/concentration hardware components that make up the core of the LAN infrastructure.
 - Wireless: This consists primarily of Wireless Access Points (WAPs), which are used to provide wireless connectivity within a building for desktops/laptops to the LAN serving the site.
 - LAN Security/Firewall Servers and LAN Encryption Hardware: These categories include Security "appliances," and LAN level firewall servers, as well as any LAN level encryption devices.
 - Network Operations Center (NOC) Hardware that is located within a client's Network Operations
 Center (NOC) used to support a client's centrally managed LAN infrastructure.
 - Test Equipment and Remote Monitoring Equipment: These categories include sniffers, droids, etc.
 used in the management, performance monitoring and trouble shooting of the LAN
 infrastructure. The costs for these may need to be prorated between voice and data services,
 depending on a client's NOC environment.
 - Network Management Servers (NOC): Servers, either located within the NOC, or elsewhere, but used primarily by the NOC to support a client's LAN infrastructure. The costs for these servers may need to be prorated between voice and various data services, depending on a client's NOC environment.
 - DNS (Domain Name Servers) and DHCP (Dynamic Host Configuration Protocol Distribution) Servers:
 These categories include the servers used to resolve domain names and dynamic IP addresses.
- MAC Hardware and MAC Cable (Closet to Desktop): These categories are intended to capture the dayto-day costs for materials used in MAC (Move/Add/Change) activity (jacks, plugs, cabling used for MAC work, etc.). Permanent building wiring is not included.

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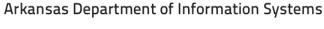


LAN Cost Definitions



- Software: Annual license and maintenance costs, as well as costs associated with new purchases and upgrades
 - Security. LAN Security/Firewall Server Software and LAN Encryption Software: These categories include the purchase and license costs for the software used in Security "appliances" and LAN level firewall servers, as well the software used in any LAN level encryption devices. These costs may, in some cases, be included in the hardware costs for this hardware, and may not be able to be broken out.
 - Network Operations Center (NOC). All software costs related to the NOC's support of the client's LAN infrastructure.
- Disaster Recovery
 - Include any voice dedicated Disaster Recovery costs
- Occupancy
 - Occupancy costs should include fully burdened costs for the facilities being used by the staff supporting the LAN. Some examples would include office space, furniture, electricity, maintenance, property taxes, security and office supplies. Occupancy for hardware (closet space, switch space, etc.) is specifically excluded (i.e., Occupancy costs should apply only to the people supporting the LAN









LAN Personnel Cost Personnel costs data collection.

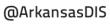


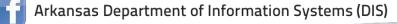
Sourcing Type		Insourced	Outsourced	Contractor	Maintenance
Budget Type		Direct	Direct	Direct	Direct
Region Located					
Personnel	\$0	\$0	\$0	\$0	\$0
Unallocated (Total Cost)	\$0	\$0	\$0		\$0
Total Cost	\$0	\$0	\$0	\$0	\$0

- Report fully burdened personnel costs for all FTEs and any outsourcing, grouped by sourcing types.
- Although Gartner will ask for FTE counts by categories (see next slide), such as operations, technical etc. it is not necessary to report the costs for each individual FTE. That is, the cost reported under Personnel is for all of the FTEs reported in the staffing section.
- For in-house staff, personnel costs include salary (including overtime pay), benefits and "other" employee costs such as travel and training.
- "Benefit load" should include costs for bonuses, paid holidays, vacation, medical/dental coverage, life and accident insurance, retirement plans, stock plans, disability, social security, unemployment compensation, dependent care, tuition reimbursement and employee assistance programs (for example, physical exams, exercise programs and similar costs). Exclude costs related to human resource department staff allocations, early retirement incentive bonuses and internal "cross-charges" for corporate overhead such as for the chairperson's salary.
- For contractors and consultants, include all compensation that was paid directly to the individual.









LAN FTE Personnel FTE data collection.



Sourcing Type		Insourced	Outsourced	Contractor
Budget Type		Direct	Direct	Direct
Staffing				
Operations / Maintenance	0.00	0.00		0.00
Engineering / Technical Services	0.00	0.00		0.00
Planning & Process Management	0.00	0.00		0.00
Services Administration	0.00	0.00		0.00
Management & Administration	0.00	0.00		0.00
Unallocated (Total FTE)	0.00	0.00		0.00
Total FTE	0.00	0.00		0.00

- Report FTEs, in-house and contractors, by role. A person should not be counted more than once. The total cost for the FTEs is reported in the Personnel cost section (see previous slide).
- Management of functions are included and may need to be prorated across multiple towers.
 For example, a Data Center Operations Manager may be allocated across servers.
- Administration is in-scope, this includes portions of individuals managing contracts, asset management etc. Note that this is within the tower being analyzed.
- If a role is less than 5% of someone's time, it may be excluded.









LAN FTE

Personnel FTE data collection.



- Operations/Maintenance
 - Network Operations Center (NOC): This includes the costs/FTEs associated with day-to-day activities of NOC related to monitoring and troubleshooting of the LAN infrastructure.
- Engineering/Technical Services
 - LAN Support (Break/Fix): LAN support is defined as technical support for the recurring, day-to-day activities that are required to keep LAN infrastructure components functional and operational (i.e., Break/Fix) including these items
 - Tier II Support: This refers to NSM monitoring/detection/correction of LAN faults, configuration changes and performance criteria.
 - Tier III Support: This refers to maintenance and repair of LAN assets.
 - Change Management (MAC work): This category is intended to capture costs/FTEs that coordinate, track and implement customer initiated LAN MACs (Moves/Adds/Changes). Note that any ongoing, day-to-day adds and changes that occur as a reaction to system failure, or as part of routine maintenance, are included in the LAN Support category.
 - Capacity Management: This area establishes the performance and capacity thresholds for network assets, monitors and reports on consumption against these thresholds and forecasts capacity needs.
 - Security Management: This includes day-to-day activities related to ensuring network privacy and protecting the LAN from corruption, espionage or sabotage. This includes firewall support, network password resets and so forth, as well as the implementation of tools, processes and procedures that prevent virus attacks and/or ensure recovery after virus attacks.







LAN FTE Personnel FTE data collection.



- Planning and Process Management
 - Systems Researching and Planning: This includes local-area network tactical planning relative to the deployment, re-grooming or refreshment of network technology.
 - Process Development and Management: This includes local-area network strategic planning relative to the deployment or refreshment network technology.
 - Project Management: This includes the local-area network project management relative to the deployment or refresh of the network technology.
 - Disaster Recovery: Producing recovery plans for the local-area data network operational services designed to ensure that, following any major incident or sudden, unplanned calamitous event causing or potentially causing disruption of the service, IT services are provided to an agreed level within an agreed schedule. It should be recognized also that IT service continuity or disaster recovery is only one component of Business Continuity Planning (BCP). ONLY INCLUDE costs/FTEs related to IT personnel and infrastructure. While there are other functions around disaster recovery/business continuity such as developing manual processes, and ensuring business unit personnel are able to function, they are not within the scope of this definition.







LAN FTE

Personnel FTE data collection.



Services Administration

- Budget, Chargeback and Service Level Reporting
- Product Management
- IT Training (training taken by IT staff)
- Asset Management
- Procurement
- Asset and Configuration Tracking
- Business and Relationship Management
- Contract and Service Provider Management

Management and Administration

- Tasks include but are not limited to setting strategic direction, communications activities, hiring and firing of staff, personnel performance reviews, expense management, approving relevant documents, planning day to day personnel workload etc. Time spent by managerial personnel on non-supervisory or departmental administration tasks (for example a data center supervisor who spends half his time managing servers) should be represented in the relevant category.
- IT Administration: Support staff for IT managers which typically include secretary, receptionist and administrative assistant, who provide direct administrative and clerical support.







Local Voice Premise (PBX and VoIP) Data model



Local Voice Premise Technology Data Model

		07
9 H	ardware	 TDM PBX VoIP/IPT Servers Voicemail Phones MAC Supplies
o s	oftware	 Voice Switch VoIP/IPT Servers Voicemail Network Management Chargeback
? ™	ransmission	Local Calling Trunk LinesNumber Blocks
	isaster ecovery	HardwareSoftwareDR "Hot Site"DR Connectivity
^ 0	ccupancy	Office Space
♣ P	ersonnel	 Technical Support (operations and technical services) Planning and Process Management Administration (includes management)

- Key Data Collection Concepts
 - Workload
 - Active extensions (PBX and VoIP)
 - Sites supported
 - Costs
 - Annual hardware cost for voice equipment
 - Annual software costs for voice management (include in hardware if unable to separate)
 - Local voice circuit costs, leased lines, DIDs, e
 - Annual disaster recovery
 - Annual facilities and occupancy
 - People supporting the local voice premise:
 - Voice support including moves, bill payment, planning
 - Management









Local Voice Premise (PBX and VoIP) What should be included.



Include only the items in purple paid for directly by your agency: PBX cost and extensions, DID and DOD lines etc. If your agency has Centrex, Tie Lines, POTS lines, flat business lines paid for by your agency please advise Gartner and DIS.

Virtual Network

components are shown in red. The costs, and workload, associated with them are captured in the WAV VNS module.



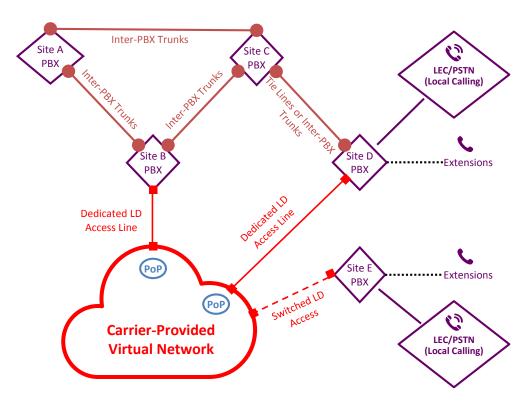
Private Network

components are shown in **blue**. The costs, and workload, associated with them are captured in the *WAV PTN* module.

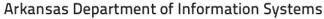


Voice Technology

components are circled in, or are shown in, **purple**. The costs, and workload associated with them, are captured in the *voice PBX* module.













Local Voice Premise (PBX and VoIP) What should be included.



Include only the items in purple paid for directly by your agency: VoIP cost and extensions, DID and DOD lines etc. If your agency has Centrex, Tie Lines, POTS lines, flat business lines paid for by your agency please advise Gartner and DIS.

VoIP/WAN

components are shown in **red**. The costs, staff and workload, associated with them fall under the *WAN* module.



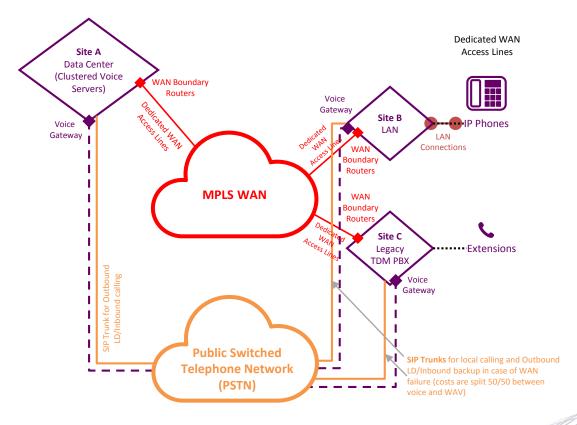
VoIP / IPT LAN

components are shown in **blue**. The costs, staff and workload, associated with them fall under the *LAN* module.



Voice Premise Technology (voice) components are shown in **purple**. The costs, staff and workload associated with them, fall under the *VoIP* and/or *PBX voice* modules.

Inbound and Outbound calling & SIP components are shown in green. The costs, staff and workload associated with them, fall under the WAV (Wide Area Voice) module.





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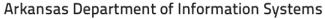




Reporting Voice Workload.

Voice Premise Technology Workload	
	North America
PBX/PABX VoIP Information	
Active Extensions / Station Ports	

- Active Extensions/Station Ports: This workload category refers to the number of telephone station ports that are actually in use on the TDM PBX.
- For VoIP, the number of active VoIP phones in use would be counted.
- Trunk ports or excess capacity (i.e., station ports that could be activated through software and the connection of a telephone set or circuit without adding additional common equipment such as circuit packs) should not be included in this count









Voice Cost Costs / spending data collection.



Voice Premise Technology Spending & Staffing					
	Total				
Sourcing Type		Insourced	Outsourced	Contractor	Maintenance
Spending					
Non-Personnel					
Hardware	\$0	\$0	\$0		\$0
Software	\$0	\$0	\$0		\$0
Disaster Recovery	\$0	\$0	\$0		\$0
Occupancy	\$0	\$0	\$0		\$0
Unallocated (Non-Personnel)	\$0	\$0	\$0		\$0
Total Non-Personnel	\$0	\$0	\$0		\$0
Transmission					
North America	\$0		\$0		
Total Transmission	\$0		\$0		

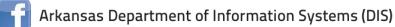
- Report annual hardware, software, disaster recovery costs here, grouped by sourcing types
- Costs much match the workload supported
- Hardware: Annual expense, lease, depreciation, maintenance, installation and taxes, as appropriate, for all hardware assets
- Software: Annual license and maintenance costs, as well as costs associated with new purchases and upgrades
- Disaster Recovery: Dedicated costs only, such as a contract or fully dedicated (no production)
- Transmission: Cost paid to carriers for local voice calling
- Unallocated: For input of costs where a breakdown is unknown such as outsourcing



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Source: Gartner, Inc.

Voice Cost Definitions



- Hardware: Annual depreciation, expense, lease and maintenance for Telephone System
 Equipment. This includes the annual costs of applicable system components for PBXs, Voice Servers,
 non Call Center ACDs, voice mail or other similar voice processing technologies.
 - PBX/PABX: This comprises a traditional, or legacy, telephone switch located on a customer's premises that primarily establishes voice-grade circuits (over tie lines to a telephone enterprise's central office) between individual users and the public-switched telephone network (PSTN). The PBX also provides switching within the customer premises local area and usually offers numerous enhanced features, including least-cost routing and call detail recording.
 - Voice Server: This is a server used in a VoIP/IPT environment that performs the same functions as a traditional PBX/PABX.
 - ACD: Only "small" ACDs, that are part of an "office" environment are included. Enterprise Call Center infrastructures are excluded.
 - Auto Attendant: This refers to a device typically attached to a PBX/PABX or voice mail system that answers incoming calls.
 - Interactive Voice Response Unit (IVRU, or IVR): non-call center IVR
 - Premise System Phones, Wired Hand Sets: Phones (digital, analog or VoIP/IPT) that are hard wired to the voice switches/servers (TDM or VoIP). Wireless Hand Sets: Cordless phones connected to the voice switches/servers (TDM or VoIP). Note that this does not refer to mobile/cell phones.
 - Speaker/Conference Phones: Speaker phones (e.g., Polycom) that are hard wired to the voice switches/servers (TDM or VoIP).
 - Voice Mail
 - Also include any voice mail hardware (processors, storage, etc.).
 - MAC Materials
 - Any Voice dedicated network operations center hardware









Voice Cost Definitions



Software

- Annual license and maintenance costs, as well as costs associated with new purchases and upgrades, for all software specified below:
- Switch/Voice Server and Peripherals (ACD, VRU, etc.) Software Costs: This cost category is intended to capture all voice processing software costs, except for those relating to voice mail and IT Management, or Network Management, software. This would include any software costs relating to the voice switch, ACDs, VRUs, etc.
- Voice Mail Software Costs: This category is intended to capture only voice mail related software costs.
- IT Management (NOC): All software costs related to the NOC's support of the local voice infrastructure.

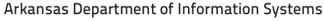
Disaster Recovery

Include any voice dedicated Disaster Recovery costs

Occupancy

 Occupancy costs should include fully burdened costs for the facilities being used by the staff supporting the voice services. Some examples would include office space, furniture, electricity, maintenance, property taxes, security and office supplies. Occupancy for hardware (closet space, switch space, etc.) is specifically excluded (i.e., Occupancy costs should apply only to the people supporting a client's voice platforms









Voice Cost Definitions



Transmission

- Include annual cost paid to carriers (reported in Outsourced) for the following: Combination/DID/DOD Trunks (for local calling only): These included costs are the aggregated regional costs for the following:
 - Combination Trunks (only for local calling): This is a circuit for communications used exclusively by your enterprise to connect to the local-exchange carrier (LEC) that is used for both the origination of outbound calls and the receipt of inbound calls. Annual cost should include fixed, as well as variable usage charges.
 - Direct Inward Dial Trunks (DID) (only for local calling): This is a circuit for communications used exclusively by your enterprise to connect to the localexchange carrier (LEC) that is used for the receipt of outbound calls. The annual cost should include fixed, as well as variable usage charges.
 - Direct Outward Dial Trunks (DOD) (only for local calling): This is a circuit for communications used exclusively by your enterprise to connect to the localexchange carrier (LEC) that is used for the origination of outbound calls. The annual cost should include fixed, as well as variable usage charges.





Voice Personnel Cost Personnel costs data collection.



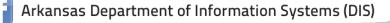
Sourcing Type		Insourced	Outsourced	Contractor	Maintenance
Budget Type		Direct	Direct	Direct	Direct
Region Located					
Personnel	\$0	\$0	\$0	\$0	\$0
Unallocated (Total Cost)	\$0	\$0	\$0		\$0
Total Cost	\$0	\$0	\$0	\$0	\$0

- Report fully burdened personnel costs for all FTEs and any outsourcing, grouped by sourcing types.
- Although Gartner will ask for FTE counts by categories (see next slide), such as operations, technical etc. it is not necessary to report the costs for each individual FTE. That is, the cost reported under Personnel is for all of the FTEs reported in the staffing section.
- For in-house staff, personnel costs include salary (including overtime pay), benefits and "other" employee costs such as travel and training.
- "Benefit load" should include costs for bonuses, paid holidays, vacation, medical/dental coverage, life and accident insurance, retirement plans, stock plans, disability, social security, unemployment compensation, dependent care, tuition reimbursement and employee assistance programs (for example, physical exams, exercise programs and similar costs). Exclude costs related to human resource department staff allocations, early retirement incentive bonuses and internal "cross-charges" for corporate overhead such as for the chairperson's salary.
- For contractors and consultants, include all compensation that was paid directly to the individual.











Sourcing Type		Insourced	Outsourced	Contractor
Budget Type		Direct	Direct	Direct
Staffing				
Operations / Maintenance	0.00	0.00		0.00
Engineering / Technical Services	0.00	0.00		0.00
Planning & Process Management	0.00	0.00		0.00
Services Administration	0.00	0.00		0.00
Management & Administration	0.00	0.00		0.00
Unallocated (Total FTE)	0.00	0.00		0.00
Total FTE	0.00	0.00		0.00

- Report FTEs, in-house and contractors, by role. A person should not be counted more than once. The total cost for the FTEs is reported in the Personnel cost section (see previous slide).
- Management of functions are included and may need to be prorated across multiple towers.
 For example, a Data Center Operations Manager may be allocated across servers.
- Administration is in-scope, this includes portions of individuals managing contracts, asset management etc. Note that this is within the tower being analyzed.
- If a role is less than 5% of someone's time, it may be excluded.





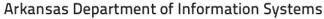






- Operations/Maintenance
 - Network Operations Center (NOC): This includes the FTEs, and their costs, associated with day-to-day activities of NOC (Network Operations Center) personnel related to monitoring and troubleshooting of the voice infrastructure.
- Engineering/Technical Services
 - Premise System Support (Break/Fix): Premise system support is defined as technical support for the recurring, day-to-day activities that are required to keep voice systems components functional and operational (i.e., Break/Fix) including these items:
 - Tier II Support: This refers to NSM monitoring/detection/correction of voice faults, configuration changes and performance criteria.
 - Tier III Support: This refers to maintenance and repair of voice assets.
 - Transmission Provisioning: This refers to coordinating the installation of facilities provided by common carriers (e.g., LECs/PTOs) and also may include making needed connections to client-owned hardware (e.g., PBXs and Voice Servers).





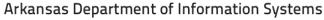






- Engineering/Technical Services (Continued)
 - Change Management (MAC work): This category is intended to capture those FTEs, and their costs, that are coordinating, tracking and implementing customer initiated MACs (Moves/Adds/Changes). Voice Mail Support (Break/Fix and Admin): This category is intended to capture the FTE counts and costs associated with maintaining and administering the voice mail infrastructures that are within the scope of the assessment.
 - Capacity Management: This area establishes the performance and capacity thresholds for network assets, monitors and reports on consumption against these thresholds and forecasts capacity needs.
 - Security Management: This includes day-to-day activities related to ensuring network
 privacy and protecting voice premise technology systems from corruption, espionage or
 sabotage. This includes firewall support and toll fraud detection, network password resets
 and so forth as well as the implementation of tools, processes and procedures that
 prevent virus attacks and/or ensure recovery after virus attacks.





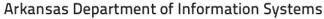






- Planning and Process Management
 - Systems Researching and Planning: This includes voice premise technology tactical planning relative to the deployment, re-grooming or refreshment of network technology.
 - Process Development and Management: This includes voice premise technology strategic planning relative to the deployment or refreshment of voice technology.
 - Project Management: This includes the voice premise technologies project management relative to the deployment or refresh of the network technology.
 - Disaster Recovery: Producing recovery plans for the voice premise technology operational services designed to ensure that, following any major incident or sudden, unplanned calamitous event causing or potentially causing disruption of the service, IT services are provided to an agreed level within an agreed schedule. ONLY INCLUDE costs/FTEs related to IT personnel and infrastructure. While there are other functions around disaster recovery/business continuity such as developing manual processes, and ensuring business unit personnel are able to function, they are not within the scope of this definition.











Services Administration

- Budget, Chargeback and Service Level Reporting
- Product Management
- IT Training (training taken by IT staff)
- Asset Management
- Procurement
- Bill payment
- Asset and Configuration Tracking
- Business and Relationship Management
- Contract and Service Provider Management

Management and Administration

- Tasks include but are not limited to setting strategic direction, communications activities, hiring and firing of staff, personnel performance reviews, expense management, approving relevant documents, planning day to day personnel workload etc. Time spent by managerial personnel on non-supervisory or departmental administration tasks (for example a data center supervisor who spends half his time managing servers) should be represented in the relevant category.
- IT Administration: Support staff for IT managers which typically include secretary, receptionist and administrative assistant, who provide direct administrative and clerical support.





